

Lectotypifications in the Genus *Petrea* (Verbenaceae)

Ricardo M. Rueda

Departamento de Biología, Universidad Nacional Autónoma de Nicaragua, León, Nicaragua; present address: Missouri Botanical Garden, P.O. Box 299, St. Louis, Missouri 63166, U.S.A.

ABSTRACT. Twenty-one specific epithets in *Petrea* need lectotypification. Of these, 17 holotypes were not originally designated, two types were destroyed during World War II, and two are missing.

As a result of an ongoing study toward a monograph of the genus *Petrea*, a number of specific epithets have been found to need lectotypification. Lectotypifications were not made in Moldenke's (1938) monograph of the genus. During the course of this study, most of the types of *Petrea* were seen via loans or herbarium visits. The objective of this paper is to lectotypify the species for which a holotype was not designated or whose holotype has been destroyed or is missing. In general, the specimens designated here as lectotypes have been selected as the most representative material available among the eligible collections, and are not necessarily the collections deposited at the author's institution (see Phillips et al., 1992, for details).

Petrea algentryi Moldenke, *Phytologia* 54: 67. 1983. TYPE: Colombia, *Gentry et al.* 37075 (lectotype, selected here, MO; islectotype, MO).

This type was collected along the Río Tagachi, 12 km west of Río Atrato, Chocó, Colombia, on 19 June 1982. According to Moldenke (1983), the holotype was deposited at the University of Texas (TEX), but this type was not found there. In addition, this holotype was never part of Moldenke's herbarium (G. Nesom, pers. comm.). Two specimens of the same collection are at the Missouri Botanical Garden (MO), marked with the word "type." The aforementioned seems to indicate that the holotype is missing. Therefore, one of the sheets at MO is designated as lectotype.

Petrea arborea Kunth, *Nov. Gen. Sp.* 2: 282–283. 1818. TYPE: Venezuela, *Humboldt & Bonpland s.n.* (lectotype, selected here, P).

This type was collected in Aragua, Venezuela, near the town of Cura, in February 1800. A holotype for this species was not designated. No specimen for this collection exists in the Humboldt–Bonpland or

Willdenow herbaria, seen on microfiche. A specimen was found at P and is designated as lectotype.

Petrea aspera Turczaninow, *Bull. Soc. Imp. Nat. Mosc.* 36: 211. 1863. TYPE: Venezuela, *Funk & Schlim* 507 (lectotype, selected here, BR; islectotypes, BM, G(2), P, W; photo of islectotype, F, MO, NY(2), TEX, U, W).

This type was collected in Carabobo near San Estevan, Venezuela, at 300 m, in April 1845. A holotype for this species was not designated, and there are numerous extant syntypes. The best specimen of the original collection is designated as lectotype.

Petrea atrocoerulea Moldenke, *Feddes Repert.* 43: 195. 1938. TYPE: Colombia, *Kalbreyer* 1634 (lectotype, selected here, K; fragment of islectotype, NY; photo of islectotype, NY, TEX).

This type was collected along the Río Porce, Antioquia, Colombia, on 7 May 1880. Moldenke (1938) designated as the holotype for this species a specimen deposited in B. However, P. Hiepko, the curator of B, informed me that this type was destroyed in World War II. Because of this, the isotype at K is designated as lectotype.

Petrea blanchetiana Schauer in DC., *Prod.* 11: 617–618. 1847. TYPE: Brazil, *Martius* 1029 (lectotype, selected here, BR; islectotypes, BM, G(2), GH, L, LE, M(2), MO, NY, S; photo of islectotype, NY).

This type was collected in Bahia, with no collection date given. A holotype for this species was not designated. The species was based on three different collections, *Martius* 1029, *Blanchet* 91, and *Salzmann* 433. Among these, Martius's specimen has more complete label data than the other collections and is duplicated in more herbaria; it agrees with the protologue, and most of the specimens are in good condition. The best specimen of the Martius collection, deposited at BR, is designated as lectotype.

Petrea bracteata Steudel, *Flora* 26: 764. 1843.

TYPE: Suriname, *Hostmann & Kappler 39* (lectotype, selected here, W; isoelectotypes, B, BM, C, F, G(2), K, LE, MO, S, U, W(2); fragment of isoelectotype, MO, NY; photo of isoelectotype, MO, NY, TEX; photo of two isoelectotypes overlaid in the same picture, NY).

This type was collected in dense forest, in April 1842; a holotype for the species was not designated. The best of the three original specimens deposited at W is chosen as lectotype. The herbarium of the New York Botanical Garden (NY) has a sheet annotated as a photograph of the type, which looks different from the rest of the collection. However, this photograph was taken from two overlaid sheets of the three original specimens at W.

Petrea brevicalyx Ducke, *Bull. Mus. Hist. Nat.*

Paris, ser. 2, 4: 748–749. 1932. TYPE: Brazil, *Ducke s.n.* (lectotype, selected here, NY; isoelectotypes, G, K, RB, S, U, US; photo of isoelectotype, GH(2), NY, TEX).

This type was collected in Igarape da Cachoeira Grande, Brazil, on the river shore in Amazonas, near Manaus, with no collection date given. This species was based on two collections, *Ducke s.n.* and *Kuhlmann s.n.*, which are both deposited at RB. The *Ducke s.n.* collection has better specimens and was distributed to more herbaria than *Kuhlmann s.n.* Therefore, the best specimen of the former collection is designated here as the lectotype.

Petrea glandulosa Pittier, *Bol. Cient. Tecn. Mus.*

Com. Venez. 1: 70. 1925. TYPE: Venezuela, *Peraza 11532* (lectotype, selected here, VEN; isoelectotypes, NY, US; photo of lectotype, NY, TEX; photo of isoelectotype, NY, TEX).

This type was collected at Cerce de Guanare, Portuguesa, Venezuela, in March 1924. A holotype for this species was not designated. The specimen in VEN, which is in good condition, is selected as the lectotype.

Petrea kohautiana C. Presl, *Bot. Bemerk.* 99.

1844. TYPE: Windward Islands, *Kohaut s.n.* (lectotype, selected here, BR; isoelectotypes, B(2), F, G, L, M; fragment of isoelectotype, NY).

This type was collected on the Island of Martinique, 1819–1821. According to Stafleu & Cowan (1983), the types were deposited at PR and PRC. Moldenke (1938) stated that the type was in PR, but he did not see it. However, both herbaria indicated that they do not have this holotype in their

possession. Because of uncertainty as to whether the putative holotype indicated by Moldenke exists, the sheet at BR, which has the best available material, is designated as lectotype.

Petrea macrostachya Benth, *Ann. Nat. Hist.*,

ser. 1, 2: 448. 1839. TYPE: Guyana, *Schomburgk 158* (lectotype, selected here, K; isoelectotypes, BM, BR, F, G, GH, K(2), LE; fragment of isoelectotype, NY; photo of isoelectotype, F, MO, TEX).

This type was collected along the Currapawaak brook, Guyana, 1835–1839. The type of this species was deposited at K and consists of two sheets of the *Schomburgk 158* collection. However, because the author of the name did not specifically designate one as holotype, a lectotype is designated here.

Petrea martiana Schauer in DC., *Prod.* 11: 620.

1847. TYPE: Brazil, *Martius s.n.* (lectotype, selected here, M; fragment of lectotype, NY).

This type was collected in woods at San Antonio de Gurupá, Pará, Brazil, 3–16 Sep. 1819. This species was based on two unnumbered Martius collections, collected in the same year and deposited at M. Of these, one was collected in Pará and the other in Amazonas. The specimen from Pará in M is selected as lectotype.

Petrea maynensis Huber, *Bol. Mus. Para* 4: 602.

1906. TYPE: Peru, *Huber 1489* (lectotype, selected here, MG; isoelectotype, RB; fragment of lectotype, F; photo of lectotype, F, NY, TEX; photo of isoelectotype, GH).

This type was collected along the Río Ucayali, between Contamana and Canchahuaya, Loreto, Peru, in November 1898. A holotype for this species was not originally designated. The best specimen of the collection deposited at MG is designated as lectotype.

Petrea mexicana Chamisso, *Linnaea* 7: 367. 1832.

TYPE: Mexico, *Berlandier 136* (lectotype, selected here, G; isoelectotype, L; photo of lectotype, TEX).

This type was collected in Tampicos, Tamaulipas, Mexico, in 1829. A type for this species was not designated. Of the two extant duplicates, the best specimen is deposited at G and is here selected as lectotype.

Petrea obtusifolia Benth, *Pl. Hartw.* 246.

1846. TYPE: Colombia, *Hartweg 1359* (lec-

totype, selected here, K; isoelectotypes, BM, G; fragment of isoelectotype, NY; photo of lectotype, NY, TEX).

This type was collected in Tolima, Colombia, in 1843. A holotype for this species was not designated in the protologue. The specimen at K might be the holotype, but this should not be concluded automatically just because Bentham worked at K (Phillips et al., 1992). This specimen, however, is in good condition and is selected here as lectotype.

Petrea ovata M. Martens & Galeotti, Bull. Acad. Roy. Sci. Belgique 11: 329. 1844. TYPE: Mexico, *Galeotti 793* (lectotype, BR; isoelectotypes, BR, G(2), GH, LE, U; fragment of isoelectotype, NY; photo of lectotype and isoelectotype, TEX).

This type was collected in Jalapa, Veracruz, Mexico, in August 1940. A holotype for this species was not designated. Moldenke (1938) assumed that the holotype was at BR and did not designate a lectotype. The specimen at BR that is in good condition is designated as lectotype.

Petrea pubescens Turczaninow, Bull. Soc. Imp. Nat. Mosc. 36: 211–212. 1863. TYPE: Venezuela, *Funck & Schlim 1504* (lectotype, selected here, BM; isoelectotypes, BR, G(2), P, U, W; photo of isoelectotype, F, MO, NY, TEX).

This type was collected at Mérida near San Cristóbal, Venezuela, at 600 m, in November 1846. A holotype for this species was not designated, and there are many duplicate sheets. The best specimen from the collection has been selected as lectotype.

Petrea racemosa Nees, Flora 4(1): 300. 1821. TYPE: Brazil, *Wied-Neuwied s.n.* (lectotype, BR; isoelectotype, G; photo of lectotype, MO, NY, TEX).

This type was collected at Bahia, Rio Grande de Belmonte, Brazil, 23 July–21 Dec. 1816. A holotype for this species was not designated. Moldenke (1938) assumed that the holotype was deposited at BR and did not designate a lectotype. The specimen at BR that is in good condition is designated as lectotype.

Petrea rugosa Kunth, Nov. Gen. Sp. 2: 282. 1818. TYPE: Venezuela, *Humboldt & Bonpland s.n.* (lectotype, selected here, P-HB; isoelectotypes, F, P; photo of lectotype, TEX; photo of isoelectotype, F, MO, NY(2), TEX).

This type was collected at Distrito Federal, Caracas, Venezuela, without a date. A holotype for this species was not designated. The best specimen is in the Humboldt–Bonpland herbarium at P and is selected as lectotype.

Petrea schomburgkiana Schauer in DC., Prod. 11: 619. 1847. TYPE: Guyana, *Schomburg 108* (photo-lectotype, selected here, MO; duplicate photo, TEX).

The precise locality of the collection is unknown. The holotype was deposited in B, and several photographs exist. However, P. Hiepko (pers. comm.) indicated that the type was destroyed during World War II. In addition, there is no other specimen of the original collection. Fortunately, the photograph available at MO is sufficient to establish the identity of the species and is selected as lectotype.

Petrea subserrata Chamisso, Linnaea 7: 368. 1832. TYPE: Brazil, *Sellow s.n.* (lectotype, selected here, K).

The precise locality of collection and date are unknown. This species was based on several unnumbered collections of Sellow. The best specimen from among these collections is selected as lectotype.

Petrea vincentina Turczaninow, Bull. Soc. Imp. Nat. Mosc. 36: 212. 1863. TYPE: Windward Islands, *Caley s.n.* (lectotype, selected here, G; isoelectotype, G; photo of isoelectotype, NY).

This type was collected in St. Vincent, Windward Islands, with no date given. A holotype was not designated for this species, and the original collection consists of two sheets both deposited in G. The best specimen of those in G is designated as the lectotype.

Acknowledgments. I thank W. D'Arcy, A. Gentry, and H. van der Werff for critical reading of the manuscript. I also thank the curators of the herbaria cited for loaning types of *Petrea*. This work was supported by NSF grant INT-9024094.

Literature Cited

- Moldenke, H. N. 1938. A monograph of the genus *Petrea*. Repert. Spec. Nov. Regni Veg. 43: 1–48, 127–221.
———. 1983. Notes on new and noteworthy plants. CLXIX. Phytologia 54: 66–68.
Phillips, S. M., R. K. Brummitt & B. P. J. Molloy. 1992. Problems of types with duplicate specimens. Taxon 41: 728–730.
Stafleu, F. A. & R. S. Cowan. 1976. Taxonomic Literature. Vol. I: A–G. Bohn, Scheltema & Holkema, Utrecht. 7.